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[Name of Document] Specification

(54) [Title of the Invention] CONTENTS INFORMATION DISTRIBUTING
SYSTEM

(57) [Abstract]

[Object]

To eliminate the disadvantage of the existing system caused by the expansion of information transmission, and to provide a contents information distributing system with improved availability of the subject matter of information.

[Solution]

A contents information distributing system composed of; means 1 and 2 to collect the subject matter of the information to create new information, a means 3 to give identification code to the whole contents created, or to each field which is a part of the whole contents divided as required, and to retrievably memorize (retain, store) the subject matter of information provided with the identification code, a means 4 to transmit the subject matter of information from the memory (retaining, storing) means, and display means 5 to reproduce the subject matter of the transmitted information.

[Claims]

[Claim 1] A contents information distributing system comprising:

means for collecting a subject matter of information and creating new information;

means for giving identification code to whole contents created, or to each field which is a part of whole contents divided as required, and retrievably memorizing the subject matter of information provided with the identification code;

means for transmitting the subject matter of information from the memory means; and

display means for reproducing the subject matter of transmitted information.

[Claim 2] The contents information distributing system comprising:

means for collecting a subject matter of information and creating new information;

means for giving identification code to whole contents created, or to each field which is a part of the whole contents divided as required, and retrievably memorizing the subject matter of information provided with the identification code;

retrieving means for retrieving the subject matter of information from the memory means; and

means for making accounting according to type of usage for retrieved information.

[Claim 3] The contents information distributing system comprising:

means for collecting a subject matter of information and creating new information;

means for encoding the new information created;

means for transmitting encoded information;

means for memorizing only required parts in transmitted information and discarding the rest of the information; and

means for transmitting required information from the memory means; and

means for combining transmitted information.

[Claim 4] The contents information distributing system for properly providing required contents information from a contents information provider to a contents information user through a data transmission channel, characterized by comprising:

memory control means installed at said contents information provider for controlling memory means to memorize the created information per se or the constituent of the relevant information (hereinafter referred to as information or constituent)

transmission control means installed at said contents information provider for retrieving required information or constituent from said memory means on demand of the contents information user and transmitting it to a contents information user as contents information; and

reproduction means installed at said contents information user for reproducing the contents information transmitted from the contents information provider on demand.

[Claim 5] The contents information distributing system according to Claim 4,

wherein said contents information provider is equipped with fetch means for importing created information from a contents information creator via said transmission channel.

[Claim 6] The contents information distributing system according to Claim 4 or Claim 5,

wherein said memory control means gives predetermined processing and editing arrangement on the information or constituent imported from the contents information creator and controls the memory means to memorize then.

[Claim 7] The contents information distributing system according to Claim 4 or Claim 5,

wherein said memory control means gives identification code to said information or constituent and controls the memory means to memorize then.

[Claim 8] The contents information distributing system according to Claim 4 or Claim 5,

wherein said memory control means gives information on the payable charges to said information or constituent and controls

the memory means to memorize them.

[Claim 9] The contents information distributing system according to Claim 4 or Claim 5,

wherein said transmission control means has a function for transmitting to said contents information user the contents information, including trial application information regarding the information or the constituent corresponding to the demand of the contents information user.

[Claim 10] The contents information distributing system according to Claim 9,

wherein said trial application information has been processed by at least one of processes for quality deterioration, subject matter limitation, and term of validity limitation, with regard to the information or the constituent corresponding to the demand of the contents information user.

[Claim 11] The contents information distributing system according to Claim 4, Claim 5, or Claim 9,

wherein said transmission control means comprise a function for exerting predetermined conversion operation on the contents information before the transmission, and said reproducing means comprise a function for restoring transmitted contents information to its original state.

[Claim 12] The contents information distributing system according to Claim 4, Claim 5, Claim 9, or Claim 11,

wherein said transmission control means has a function for implementing an accounting process for the contents user in regard to the transmitted contents information.

[Detailed Description of the Invention]

[0001]

[Field of the Invention]

This invention relates to a contents information distributing system in which the subject matter, images for instance, of the

information representing a right is retrievably stored in certain memory means as an entitled information, and a third person can retrieve and utilize it as much as required when the need arises, and can simply pay the usage fees in accordance with his or her type of usage.

[0002]

[Description of the Prior Art]

It is an indisputable fact that highly-networked information society has undergone the increasing evolution by offering a lot of information including the technology to the society (transmission of information), and choosing or refusing them freely. Especially in the case of so-called electronic media, new media has been developed and applied, and then, popularized and evolved by repeating the correlated cycle, in which, by the nature of high-technology industry, the advancement of technology creates a new device, which results in the rise of new needs, which in turn creates the new approach.

[0003]

By the way, it is important for the information, which is the foundation of the popularization and evolution, and more specifically for the contents constituting the subject matter of information, to be able to "give and receive" required information when necessary at the place requiring them, in simple, stable, and safe manner with the ability of succession, without causing problems to others, and at fair rates, and at the same time it is important for them to be utilized to provoke the new "production".

[0004]

For example, the broadcasting system centered around the radio and the television does have a distinctive advantage that it can provide information of news, sports, and others to the public instantaneously and at a lower cost. However, for dramas and movies, it has the inherent disadvantage that they are

available only at the particular time determined by the sender. Thus, the disadvantage has been improved by the domestic-use VTR (Video Tape Recorder) applying the time-shift approach, which has become one of the smash hits among the consumer electronic AV (Audio-Visual) products. This is the improvement for the requirement of "when necessary" among those requirements for popularization and evolution mentioned above, and it should be construed that VOD (Video On Demand) system utilizing the communication infrastructure has achieved further improvement in the same requirement with higher quality finish.

[0005]

Reconsidering the situation in the highly-networked information society, one can see that transmission of information constitutes an important factor besides the receipt of information, because of the diversification of the contents.

[0006]

To put it more clearly, a subject in the highly-networked information society in the future will lose its existence value if it does not transmit information, and thus the desire for transmitting the information will naturally increase.

[0007]

Such increase in the desire for transmitting the information will encourage the production of information utilizing the contents, and will facilitate the environmental improvements for distributing information, which will result in the greatly enhanced conditions for carrying out the transmission of information.

[0008]

The advancement in producing the information, and environmental improvement for distributing information have promoted the diversification of the electronic media, especially of the Audio Visual contents (hereinafter referred

to as "AV contents") closely related to the general household. This has caused the shifting from the mass production of limited types of products into the age of small-scale production for wide variety of products.

[0009]

In addition, the AV contents have undergone the changes from ready-made information into the selective type of information, and also have undergone the paradigm shift from the age of advertisement into the age of searching.

[0010]

By the way, the incentive for the transmission of information is given by the desires for (1) self-fulfillment (to hope everyone know about one's idea, feelings, works, and so on), (2) contribution to the society (to be useful for everyone else, to render service for the world), or (3) getting the reward (to get profits by offering information), but on the other hand it gives rise to the issues of the technical development.

[0011]

Specifically this means the environmental improvement for communicating an important information, which includes the improvement of; first, searching function (to notify or know the existence of information), second, accounting function (to collect the right amount of charges), and third, Audio Visual server function (hereinafter referred to as AV server function) (to respond to the access by the general public).

[0012]

To date, however, the only way of utilizing the information for the general public, the receiver of the information, has been to receive the broadcasting unilaterally and enjoy them, for example.

[0013]

Now, as a result of globalization, or economical borderlessness, competition and collaboration takes place

under the uniform rule all over the world, and because the efficiency of information processing and distribution has been dramatically improved, since the rapid development of digital technique has enabled the performance of various information processing and distribution on the common platform called digital, and also because the communication and exchange of information has been expanded according to the progressing construction of an information and telecommunication infrastructure, the general public, those who was only receiving the information in the past, have transformed into the uncounted numbers of generator and sender of the information on the network as an individual, or in a small group.

[0014]

[Problem to be Solved by the Invention]

In the conditions at the present day, creation of new technology is encouraged by giving the industrial property rights to the creator of a new technology such as patent rights as an exclusive privilege to compensate the disclosure of the technology for certain period of time, intending to make contribution to the industrial advancement.

[0015]

This system works very well, and have made great contribution to the industrial advancement; however, one cannot deny the fact that sometimes it is difficult to make use of it when one desires to make it implemented.

[0016]

One of the reasons for such difficulty seems to lie in the gap between the speculation of a right holder and the expectation among the users, as well as the difficulty in identifying the infringement of the right.

[0017]

In the present society, however, communication and exchange of information has been expanded according to the progressing

construction of an information and telecommunication infrastructure, and consequently, the general public, those who was only receiving the information in the past, have increasingly transformed into the uncounted numbers of generator and sender of the information on the network as an individual, or in a small group. For these reasons, it will not match the expanding globalization in the present day if the right holder sticks only to the area covered by his own right.

[0018]

This invention has started from the recognition that uncounted numbers of generator and sender of the information are being networked via a providing means containing memory (accumulation) of contents (subject matter of information), and that the new technology coming from it (providing means) after selection and rejection will also amount to unimaginably great numbers, resulted in the associated engineering progress and its speed increasing at an accelerating pace, and thus, sticking to the conventional notion will not match the trend of the times, and so the invention solves the concern by providing a contents information distributing system in which, for example, the subject matter, images for instance, of the information representing a right is retrievably stored in certain memory means as an entitled information, and a third person can retrieve and utilize it as much as required when the need arises, and can simply pay the usage fees in accordance with his or her type of usage.

[0019]

[Means for Solving the Problem]

In order to attain the objective, the invention according to Claim 1 is characterized by comprising: means for collecting a subject matter of information and creating new information; means for giving identification code to whole contents created, or to each field which is a part of whole contents divided as

required, and retrievably memorizing the subject matter of information provided with the identification code; means for transmitting the subject matter of information from the memory means; and display means for reproducing the subject matter of transmitted information.

[0020]

The invention according to Claim 2 is characterized by comprising: means for collecting a subject matter of information and creating new information; means for giving identification code to whole contents created, or to each field which is a part of the whole contents divided as required, and retrievably memorizing the subject matter of information provided with the identification code; retrieving means for retrieving up the subject matter of information from the memory means; and means for making accounting according to type of usage for retrieved information.

[0021]

The invention according to Claim 3 is characterized by comprising: means for collecting a subject matter of information and creating new information; means for encoding the new information created; means for transmitting encoded information; means for memorizing only required parts in transmitted information and discarding the rest of the information; and means for transmitting required information from the memory means; and means for combining transmitted information.

[0022]

The invention according to claim 4 is the contents information distributing system for properly providing the required contents information from a contents information provider to a contents information user through a data transmission channel, characterized by comprising; memory control means installed at said contents information provider for controlling memory means

to memorize the created information per se or the constituent of the relevant information (hereinafter referred to as information or constituent) transmission control means installed at said contents information provider for retrieving required information or constituent from said memory means on demand of the contents information user and transmitting it to a contents information user as contents information; and

reproduction means installed at said contents information user for reproducing the contents information transmitted from the contents information provider on demand.

[0023]

The invention according to Claim 5 is characterized in that with regard to Claim 4, said contents information provider is equipped with fetch means for importing created information from a contents information creator via said transmission channel.

[0024]

The invention according to Claim 6 is characterized in that with regard to Claim 4 or Claim 5, said memory control means gives predetermined processing and editing arrangement on the information or constituent imported from the contents information creator and controls the memory means to memorize then.

[0025]

The invention according to Claim 7 is characterized in that with regard to Claim 4 or Claim 5, said memory control means gives identification code to said information or constituent and controls the memory means to memorize then.

[0026]

The invention according to Claim 8 is characterized in that with regard to Claim 4 or Claim 5, said memory control means gives information on the payable charges to said information or constituent and controls the memory means to memorize them.

[0027]

The invention according to Claim 9 is characterized in that with regard to Claim 4 or Claim 5, said transmission control means has a function for transmitting to said contents information user the contents information, including trial application information regarding the information or the constituent corresponding to the demand of the contents information user.

[0028]

The invention according to Claim 10 is characterized in that with regard to Claim 9, said trial application information has been processed by at least one of processes for quality deterioration, subject matter limitation, and term of validity limitation, with regard to the information or the constituent corresponding to the demand of the contents information user.

[0029]

The invention according to Claim 11 is characterized in that with regard to Claim 4, Claim 5, or Claim 9, said transmission control means comprise a function for exerting predetermined conversion operation on the contents information before the transmission, and said reproducing means comprise a function for restoring transmitted contents information to its original state.

[0030]

The invention according to Claim 12 is characterized in that with regard to Claim 4, Claim 5, Claim 9, or Claim 11, said transmission control means has a function for implementing an accounting process for the contents user in regard to the transmitted contents information.

[0031]

[Embodiment of the Invention]

Now, an embodiment of this invention will be described below with reference to the drawings. Fig. 1 is a block diagram

schematically showing an embodiment regarding a contents information distributing system of this invention.

[0032]

In Fig. 1, the numeral 1 denotes a creating means such as a camera to fetch and record the image from the natural world as a material that constitutes the subject matter of information. In the case of voice, the camera is replaced with a microphone. Or, it may be a home server and the like.

[0033]

Numeral 2 denotes a production means to finalize the above-mentioned fetched information into a work. Editing and encode, for instance, are included in this process.

[0034]

Numeral 3 denotes a memory means such as a ROM/RAM or a server for retrievably storing the subject matter of information, in order to accumulate the work produced by the production means 2, and to give identification code to the whole contents created, or to each field which is a part of the whole contents divided as required for searching. The information may be classified roughly into moving image, still image, character, data, and voice-support depending on the nature of information to be accumulated. Among them, the moving image and audio information have to be treated generally with real-time capability, while still image, character, and data do not call for the real-time capability. In many cases, moving image and data have larger information volume, while the volume of other information is not so large.

[0035]

For this reason, a server is categorized into a video server which can deal with the moving image, and a data server which deals with data. Normally, the audio information is stored in the video server, while the still images and the characters are stored together in the data server. Of course all of these

information may be stored in the same server.

[0036]

The video server includes "file transfer type" and "real-time transfer type", and the real-time transfer type is advantageous in terms of its cost, as far as complicated operation like moving image processing will not be performed at the receiving end.

[0037]

Further, accounting information may be provided in the memory means for making account based on the type of usage for the subject matter of information retrieved on demand of a third person.

[0038]

In addition, the memory means 3 and the third person are of course networked by the terminal device, although it is not shown in the figure.

[0039]

Further, the means for accounting may of course be provided separately from the memory means 3. Numeral 4 denotes, for instance, a wired or wireless transmission means that receives, for instance, only the required information transferred from the memory means 3 to perform modulation, demodulation, multiplexing, and other processing on such required information.

[0040]

The transmission technique is divided generally into wired transmission technique and wireless transmission technique, however, there are many common aspects between wired type and wireless type with regard to the modulation and the demodulation technique.

[0041]

The wired transmission technique is divided into metal cable type and optical fiber cable type in accordance with the transmission media, and these types may be divided further into a type transmitting with on-off signal of 1 and 0, and the other

type utilizing multi-valued signal to make transmission within the limited frequency band.

[0042]

Wireless transmission technique is divided into normal electromagnetic wave type and optical type such as infrared in accordance with the transmission frequency band, and again, these types may be divided further into a type of on-off signal transmission and the other type of multi-valued signal transmission.

[0043]

One of these approaches, the infrared transmission, has been adopted because it is less restricted by the Radio Law, but in the future some action will be necessary assuming the support for extremely high frequency band.

[0044]

Next, for modulate/demodulate technology, most of them is commonly applicable for both wired transmission and wire-less transmission, among which high-efficiency modulate/demodulate technology to deal with multi-valued signal is particularly of great importance.

[0045]

High-efficiency modulate/demodulate technology include QAM, OFDM, CDM, and so on. Particularly, OFDM or CDM is effective in alleviating the effects of multi-path in the wire-less transmission. Application of OFDM and CDM is also valid for the transmission systems in poor condition.

[0046]

In addition, correction technique for signal error in the transmission channel, encrypting technology to prevent wiretapping or illegal duplication, as well as ID (individual identification) technique to be paired with encrypting, are also of great importance, although they are not the transmission technique per se.

[0047]

Numerals 5 denotes a display means such as a display unit, which shows the information transmitted by the transmission means 4 in the required information format by combining them, for instance. [0048]

Then, the information from the display means goes back to the creating means and others for feed back.

[0049]

Other than the above, the display means include a decoder (supporting a high-efficiency encoder), a speaker, and a disc player.

[0050]

Next, specific construction and function of the above-mentioned contents information distributing system will be described in detail with reference to the drawings.

[0051]

Fig. 2 is a block diagram showing the entire configuration of the contents information distributing system shown in Fig. 1 when it is applied to an AV contents information distributing system. The system 10 is configured with; an AV contents bank 11 which works as a contents information provider (hereinafter referred to as "contents bank"), a terminal system at the creator of the contents information (hereinafter referred to as "contents registrant") 12, a terminal system at the user of the contents information (hereinafter referred to as "contents user") 13, a financial organization 14 that works as a media to carry out the accounting process, and a network 15 that works as a media to transmit various kinds of information, message, and others including the contents information.

[0052]

The above-mentioned contents bank 11, the contents registrant 12, and the content user 13 are connected to the network 15 by means of an ordinary computer system including an input device

such as a keyboard, a mouse, a light-pen, and a flexible disc unit for instance, a CPU (central processor unit), and a recorder such as ROM, RAM, and a magnetic disc connected to the CPU, and an output device such as a display unit and a printer unit. Particularly, various functions of the contents bank 11, which is described later, are implemented on a computer system provided with a database.

[0053]

Further, the computer system for the contents user 13 is provided with a function of reproduction means for reproducing the contents information transmitted from the contents bank 11 via the network 15, and the computer system for the contents bank 11 is provided with a function of capturing means to fetch the contents transmitted from the contents registrant 12 via the network 15.

[0054]

Next, a contents information distribution system, in which the contents registrant 12 retrievably stores newly created contents in the contents bank 11, and the contents user 13 pays charges in accordance with the type of usage to the contents registrant 12 via the contents bank 11 and the financial organization 14 when the contents user 13 pulled out and utilized the required information in the form of contents information, will be described.

[0055]

1. production and registration of contents:

The contents registrant 12 collects images and voices using a videotape camera-recorder, a still image camera, or a voice recorder, for instance, and produces contents by editing and processing such images and voices in the manner conceived by the contents registrant himself. Then, as the production is completed, the contents are registered at the contents bank 11 via the network 15.

[0056]

The contents bank 11 is provided with three data bases. That is, a contents registrant management database 16 to manage the information related to the contents registrant 12, a contents data base 17 to manage the contents in the file format, and a contents user management database 18 to manage the information related to the contents user 13.

[0057]

As the contents are sent by the contents registrant 12, information related to the registrant (i.e. the contents registrant), description of registered contents, payment method, and so on are registered (they are sorted out into moving image, still image, and classification items) in the contents registrant management database 15. One example is described below.

[0058]

(1) Information related to the registrant; name, age, address, occupation, sex, phone number, e-mail address, payment method,

(2) Information related to the registered contents; heading of the registered contents, file size, data format, the date of registration,

(3) Information related to the registered contents after processing and editing; new (modified) heading, and so on,

(4) Information related to the usage of registered contents; the date of usage, heading, usage fees , accumulated usage fees, the date of actual payment, the amount paid. At the contents bank 11, opening a Web site for contents registration / usage on the internet will help both the contents registrant 12, and the contents user 13 to facilitate the system utilization. Now, once the contents registrant 12 is certified as a registrant by inputting the information listed above, the contents produced by the registrant will be registered in the contents data base 17. The contents data base 17, serving as a record

control means, is provided with not-shown information processing means and editing means to perform processing and editing of the contents, and the processing and editing of the contents are implemented when necessary. For instance, ready-made editing unit, or image editing software run on a computer system may be utilized as the information processing means and editing means mentioned above. The processing and editing performed at the time are classified into the applicable level depending on what has been done in the course of processing and editing. One example is described below.

[0059]

- (1) No processing or editing,
- (2) Simple filtering (for eliminating noise, emphasizing edges, gamma correction, and so on),
- (3) Editing such as adding a title, partial deletion, and giving effects,
- (4) Separation into elements utilizing the contents in part, creation of elements by turning the contents into an object, or creation of three-dimensional information. When the contents are stored in the contents registrant management database 15, the applicable processing and editing level mentioned above is included as the additional information in the files attached to each contents. This additional information is utilized as a basis when determining the usage fees payable to the contents registrant in the accounting process.

[0060]

Concrete processing and editing of the registered contents, and registration on the database will be instantiated below.

[0061]

Fig. 3 is an illustration showing an example of contents sent by the contents registrant 12. Fig. 3 (a) shows the original contents. The contents consists of multiple objects, and Fig. 3 (b) and (c) are the elements created by separating

(processing) each object. When registering the contents shown in Figs. 3 (a), (b), and (c) at the contents registrant management database 16 as the registered contents information, new (modified) titles such as ABCD-1, ABCD-2 are given to the objects separated into elements. Separation of the contents into element is performed automatically or manually based on the request or consent of the contents registrant 12. To perform the separation automatically, various methods are applied including QBIC method (trade name registered by IBM), Illustra & VIR method (by virage Co., Ltd.), Visual SEEK method (by Columbia University in the U.S.A.), VP method (University of Tokyo), ExSight (NTT), and so on, and MPEG 7 is also utilized.

[0062]

Created information per se as shown in Fig. 3 (a), and image information regarding the constituent of (a) as shown in Figs. 3 (b) and (c) are accumulated in the contents data base 17, and besides them, the following information is added as identification code to be used for searching. One example is described below.

[0063]

- (1) Name of registrant, initial title, description of processing and editing performed,
- (2) New title, file size, data format,
- (3) The date of registration to the contents bank, usage fees,
- (4) Key word for searching, for instance, information shown in Fig. 4 (a) and (b) are registered when the contents separated into elements as shown in Figs. 3 (b) and (c) are registered in the contents data base 17.

[0064]

Further, the utilized contents information as indicated in the subsequent section, are registered in the contents user management database 18. One example is described below.

[0065]

(1) User information; name of the user, title of the information used, the time and the date of usage,

(2) Information of payable charges; amount of usage fees, amount of accumulated usage fees,

(3) Information related to the collection of charges; the date of collection for the accumulated charges, and the collected amount.

A series of work starting from contents production through to the contents bank registration by the contents registrant will be described in the following section based on the flow chart shown in Fig. 5. Note that details and order of the work may vary depending on the actual system operation.

[0066]

First, the contents registrant 12 gathers material with which the contents are created (step 101), and produces the contents (step 102), and then, accesses the Web site of the contents bank 11 (step 103), and goes through the registration process on the Web site (step 104). At this point, the individual information of the registrant, and the image data and other data of the contents are to be sent to the contents bank 11 via the network 15. Next, at the contents bank 11, various information that have been input during the registration process are registered in the contents registrant management database 16 (step 105). Then, the registered contents are processed and edited (step 106). The contents after processing and editing are registered in the contents data base 17 with additional information (step 107). After that, the registered information are communicated to the registrant.

[0067]

Regarding the contents registered in the contents database 17 at the contents bank 11, the identical contents are accumulated basically in the uniform data format, and a data format conversion means (now shown) is provided, which converts

the data retrieved from the contents database in real-time to have the desired format and send them out, during the process that the contents user 13 selects and obtains the contents. In this way, various data format desired by the contents user 13 will be supported. For instance, the image data accumulated in the BMP file server for relatively high-definition images can be converted into JPEG data format as they are sent out. In addition, the contents bank 11 is provided with an encode and combining means (not shown) which enable the conversion into another encoding rate desired by the contents user 13. For instance, the data in which the moving image is accumulated by MPEG 2 can be converted to MPEG1, MPEG 4, or wavelet (in this case the amount of data can be altered) . In this way, the contents information for delivery can be converted into such data format, and in such amount of data that is desired by the contents user 13.

[0068]

2. Contents acquisition and accounting;

Next, a series of work starting from contents acquisition through to the accounting process by the contents user will be described in the following section based on the flow chart shown in Fig. 6. Note that details and order of the work may vary depending on the actual system operation.

[0069]

First, the contents user 13 accesses the Web site of the contents bank 11 (step 201), carry out searching within the Web site to obtain the contents (step 202). Searching may be carried out, for instance, by finding and clicking on the contents acquisition button on the Web site, by searching for the target contents from categorized selection screen, or by fuzzy search carried out by the key word input. When the target contents are found by the searching, the items searched, thumbnail images, and description of the subject matter are

displayed (step 203). Thumbnail view is a small pictorial image to display the contents, and description of the subject matter specifically includes the title, file size, data format, and so on. The contents user 13 exits from the search menu to proceed to the next step when the target contents have been acquired by the searching ("Yes" at step 204), or returns to the step 202 if the target contents could not be acquired ("No" at step 204).

[0070]

Once the searching is completed, the contents user 13 selects the required contents among the items searched. If the data format or the amount of data has to be altered at this point, the user specifies such alterations before acquiring the contents (step 205). Contents bank 11 verifies the payable charges and so on based on the heading of the contents fetched by the contents user 13, and records them in the contents user management database as part of the utilized contents information. At the same time, it records the registered contents utilization information in the contents registrant management database 16. From this time forward, it collects the usage fee periodically from the contents user 13, and periodically pays the usage fee for to the contents registrant 12 (step 207).

[0071]

The methods for collecting the usage fee include, for example, drawing out the charges periodically (i.e. monthly for instance) from the bank account of the contents user 13 which is registered in the financial organization 14. Then, once the utilization fee is collected, the amount of accumulated usage fees recorded in the contents user management database 18 is reset to zero, and the completion of the charge collection is recorded. Also, the details of the usage fee collected will be notified to the contents user 13 by way of the network 15

(or by post or any other way). On the other hand, the payment of the utilization fee is carried out in such a manner that the amount corresponding to the accumulated usage fees recorded in the contents registrant management database 16 are transferred periodically (i.e. monthly for instance) to the bank account, for instance, of the contents registrant 12 which is established in the financial organization 14. Then, after the payment of the utilization fee, the amount of accumulated usage fees recorded in the contents registrant management database 16 is reset to zero, and the amount of payment, as well as the date of payment are recorded. Also, the details of the paid utilization fee will be notified to the contents registrant 12 by way of the network 15 (or by post or any other way).

[0072]

As described above, added value attached to the contents by processing and editing the registered original contents, and the management provided to pay the usage fees to the contents registrant in accordance with the subject matter and the level of the registered contents, will help satisfy the desire of the contents registrant, like the desire of self-fulfillment, and at the same time evoke the urge for the new creation. On the other hand, the provision of high-quality contents to the contents user (other contents producer) will promote the smooth running of the contents production circle, which in turn provides an AV contents information distributing system to support the existing network age requiring the higher level contents both in quality and quantity.

[0073]

Next, concrete process for providing trial application of the various contents registered in the contents bank 11 to the contents user 13 will be instantiated below.

[0074]

When the contents user 13 searched the desired contents in

the contents bank 11, accompanied information such as title, summary, keyword, and so on are presented to describe the subject matter. However, sometimes these accompanied information are not enough to fully grasp the subject matter in the case of AV contents. Especially when producing the new contents through processing and editing, it is often difficult to identify the desired contents unless the contents are actually imported and verified in terms of its effect and matching in the entire creation. Given this factor, the present AV contents distributing system makes initial distribution of contents information in conditional way limiting its quality, subject matter, and term of utilization. The contents can be used without these limitations once the accounting process is completed. A specific embodiment of the means for providing trial application, mainly with quality limitation, will be described below.

[0075]

[Embodiment 1]

Fig. 7 is a block diagram showing the configuration to provide trial application for compressed encryption data of low resolution. The contents imposed into the contents bank 11 is accumulated in the contents data base 17 after the predetermined processing and editing are performed. In this process, input image signal is image-compressed (DCT conversion, digitization, and variable encode) by means of two encoders 21 and 22, one of which is accumulated as high-resolution compressed encoded data, and the other is accumulated as low-resolution compressed encoded data after cutting off the higher range components using a LPF (low pass filter). In this way, the two kinds of data are accumulated for one contents with different resolutions. That is, low-resolution compressed encoded data with lower quality image is accumulated as the distribution data for providing trial application, while high-resolution compressed encoded

data is accumulated as the distribution data for proper purchasing.

[0076]

When the contents user inputs the send-out request to the controller 24, the low-resolution compressed encoded data is delivered at first to serve as the distribution data for providing trial application. The contents user will check the subject matter of the contents with the low-resolution data to consider if he or she will purchase it or not. Then, once the proper purchase is determined, and the send-out request is input again, the high-resolution compressed encoded data is delivered as the distribution data for the proper purchase. Note that this embodiment is applicable for voice data distribution as well.

[0077]

[Embodiment 2]

Fig. 8 is a block diagram showing the configuration in which only the differentials between the high resolution data and the low resolution data are distributed at the time of proper purchase. The elements corresponding to those in Fig. 7 of the embodiment 1 are denoted by the identical mark.

[0078]

The contents imported into the contents bank 11 is accumulated in the contents data base 17 in the same manner as the embodiment described in the foregoing section, after the predetermined processing and editing are performed. At the time, the input image signal is band-limited to approximately $1/N$ in vertical and horizontal directions respectively by LPF 23 to fit to the subsample in the subsampler 25. The pixels are eliminated (i.e. number of pixel is reduced) to $1/N$ in vertical and horizontal directions respectively by the subsampler 25, to make low-resolution images to be fed into the encoder 22 and interpolation device 26. Pixels eliminated by the reduction are interpolated by the interpolating device 26 to constitute

interpolated signals having the same number of pixels as the input image signal and yet getting band-limited, which in turn is fed into the subtraction input at the subtracter 27. At the subtracter 27, said interpolating signals are subtracted from the input image signals to constitute signals made up with only the higher range components, and they are fed into the encoder 21. In this way, the input image signals taken into as the contents information are accumulated in the manner that the low-resolution compressed encoded data and the high-resolution compressed encoded data are divided into layers. That is, low-resolution compressed encoded data with lower quality of image is accumulated as the distribution data for providing trial application, while compressed encoded data of differentials between the high-resolution data and the low-resolution data (differential data) is accumulated as the distribution data for proper purchasing. These two data are correlated, and accumulated as a pair of data.

[0079]

When the contents user inputs a send-out request to the controller 24, the low-resolution compressed encoded data is delivered at first to serve as the distribution data for providing trial application. At this point the user ID is issued and added to the distribution data. Once the proper purchase is determined and the send-out request with user ID is input, the differential data that is paired with the formerly distributed low-resolution compressed encoded data is delivered as the distribution data for the proper purchase. The user ID is used, in addition to the usage intended for the management of registrant in this embodiment, to control the data so that the distribution data for trial application that has already been distributed is correctly paired with the differential data. Further, when the contents are updated, distribution data for providing trial application and the

differential data are prepared for the old contents and the new contents respectively, to deliver the differential data created around the same time as the distribution data for trial application that is in the possession of the contents user.

[0080]

The contents user can view the low-resolution image by decoding the low-resolution compressed encoded data, namely, the distribution data for providing trial application. In addition, when the differential data is obtained at the time of proper purchase, high-resolution image can be viewed by decoding the low-resolution compressed encoded data and the differential data, and making addition of them.

[0081]

Next, a series of work starting from the provision of trial application through to the proper purchasing in the embodiment 2 will be described in the following section based on the flow chart shown in Fig. 9. Note that details and order of the work may vary depending on the actual system operation.

[0082]

First, the contents user 13 accesses the Web site of the contents bank 11, and carry out searching within the Web site to obtain the contents (step 301). Based on the result of this searching, the contents user 13 selects one of the options; the purchase of the contents, the trial application, or no action. For example, a screen for selecting options such as "purchase", "trial application", or "no action" can be displayed after the searching.

[0083]

Once the contents user 13 gives response to the selecting screen, judgment is made to identify what has been selected (step 302). If the contents user 13 has selected "purchase", the user ID is issued (step 303), and the entire data of the contents will be delivered (step 304). In this case, both the

low-resolution compressed encoded data and differential data will be distributed simultaneously. If the contents user 13 has selected "trial application", the user ID is issued (step 305), and the low-resolution compressed encoded data for providing trial application will be delivered (step 306). Then, after the certain period, contact the contents user 13 by sending, for instance, the screen for selecting options such as "purchase", "no action" to confirm the user's intention for purchasing the contents.

[0084]

Once the contents user 13 gives response to the selecting screen, judgment is made to identify what has been selected (step 307). If the contents user 13 has selected "purchase", the user ID is issued (step 308), the paired differential data will be delivered as the distribution data for the proper purchase (step 309). Further, once the data is delivered in step 304 or in step 309, the predetermined accounting process, including the collection of usage fee, is implemented (step 310).

[0085]

Since only the differential data is delivered at the time of proper purchase in the case of this embodiment 2, the amount of delivered data can be reduced in comparison with the embodiment 1, allowing the reduction of communication cost for the proper purchase. Note that this embodiment is applicable for voice data distribution.

[0086]

[Embodiment 3]

Fig. 10 is a block diagram showing the configuration in which the differential data to be delivered is encrypted at the time of proper purchase. The elements corresponding to those in Fig. 8 of embodiment 2 are denoted by the identical mark.

[0087]

In the embodiment 3, the processes up to the accumulation of

the contents that has been imported from the contents registrant in the contents database 17 are identical with those in the embodiment 2.

[0088]

In the embodiment 2 described in the foregoing section, the low-resolution compressed encoded data is sent out initially as the distribution data for providing trial application, and then the differential data is sent out when the proper purchase is determined, while in the case of the embodiment 3, the low-resolution compressed encoded data and encrypted differential data are delivered as the distribution data for providing trial application. The encrypted differential data is created, for instance, in the following process: First, user ID is issued when the sent-out request is placed by the contents user, and encryption key is generated by key-generation means 28 based on the user ID. The encryption key is registered to have corresponding relation with the user ID. Then, as the distribution data is sent out to the contents user, the differential data paired with the low-resolution compressed encoded data is retrieved, and is encrypted by the encryption means 29 based on the formerly described encryption key. Then, formerly described low-resolution compressed encoded data and the encrypted differential data are delivered as the distribution data by way of the multiplexer 30.

[0089]

The contents user can view the low-resolution image by decoding the distribution data received, but the high-resolution image cannot be viewed since it is encrypted. Then, once the proper purchase is determined and the send-out request with user ID is input, the encrypted key corresponding to the user ID is delivered. The contents user can view the high-resolution image by decoding the differential data using the encryption key delivered to the user, and making addition

of the decoded differential data and the low-resolution compressed encoded data.

[0090]

Next, a series of work starting from the provision of trial application through to the proper purchasing in the embodiment 3 will be described in the following section based on the flow chart shown in Fig. 11. Note that details and order of the work may vary depending on the actual system operation.

[0091]

First, the contents user 13 accesses the Web site of the contents bank 11, and carry out searching within the Web site to obtain the contents (step 401). Based on the result of this searching, the contents user 13 selects one of the options; the purchase of the contents, the trial application of the contents, or no action. The contents bank 11 makes judgment to identify what has been selected (step 401). If the contents user 13 has selected "purchase", the user ID is issued (step 403), the entire data of the contents will be delivered (step 404). In this case, both the low-resolution compressed encoded data and the differential data are delivered simultaneously without encryption, or deliver the encrypted data with encryption key. If the contents user 13 has selected "trial application", the user ID is issued (step 405), and the low-resolution compressed encoded data for providing trial application is delivered along with encrypted differential data (step 406). Then, after the certain period, contact the contents user 13 by sending, for instance, the screen for selecting options such as "purchase", "no action" to confirm the user's intention for purchasing the contents.

[0092]

Once the contents user 13 gives response to the selecting screen, judgment is made to identify what has been selected (step 407). If the contents user 13 has selected "purchase",

the user ID is issued (step 408), the encryption key corresponding to the user ID will be delivered as the distribution data for the proper purchase (step 409). Further, once the data is delivered in step 404 or in step 409, the predetermined accounting process, including the collection of usage fee, is implemented (step 410).

[0093]

Since only the encrypted data is delivered at the time of proper purchase in the case of this embodiment 3, the amount of delivered data can be reduced in comparison with the embodiment 1 or the embodiment 2, allowing further reduction of communication cost for the proper purchase. Note that this embodiment is applicable for voice data distribution.

[0094]

[Embodiment 4]

The contents consisting of image data were exemplified in the embodiments described above, and now, the contents consisting of voice data will be exemplified in this section.

[0095]

Fig. 12 is a block diagram showing the configuration to provide lower range voice data among other voice data for trial application. The voice data fetched as contents are divided into 32 sub-bands, for instance, by sub-band division filter 31, and are subjected to frequency analysis by FFT 32, and then, lower range frequency level used for providing trial application is established through psychological acoustic sense model. After this, quantization is performed by a quantizer 33 for each sub-band formed by the division by the sub-band division filter 31. Here, quantifying bit number is established for each frequency band, so that the higher range frequency level is quantized with larger bit number, while the lower range frequency level is quantized with smaller bit number. These data are accumulated in the contents database 17 via a hierarchical

formatting means 34. In this way, the voice data are accumulated dividedly in two hierarchies consisting of lower range voice data with sound quality of AM radio for instance, or with even lower sound quality that is used for providing trial application, and higher range voice data that serves as the distribution data for the proper purchase. The process flow starting from the provision of trial application to the contents user through to the proper purchasing is in accordance with Fig. 9. Higher range voice data is distributed at the time of proper purchase.

[0096]

Note that the voice data as one of the contents type includes musical performance data using an electronic sound source (such as MIDI). For this type of data, means for providing trial application with limited quality can be implemented by using the data with reduced number of tones or those without any effect as the distribution data for providing trial application, and by delivering the complete data at the time of proper purchase.

[0097]

Next, means for providing trial application by limiting the subject matter, and other means for providing trial application by limiting the term of validity will be described briefly.

[0098]

The means for providing trial application by limiting the subject matter will include creating, for example, the data containing only the initial part, or the data containing some silent period (i.e. the period without sound) in the case of the voice data, or the data with dropouts (i.e. lack of pixels) in the case of image data, which will be used as the distribution data for providing trial application. Other conceivable means will include adding the implementation program in the data that limits the number of viewable times (i.e. the file will never open for the second time after the user opens it once.) or prohibit the reproduction (i.e. reusing not allowed), and use

the data with such program as the distribution data for providing trial application.

[0099]

The means for providing trial application with limited term of validity will include, for example, allowing the data usage in the trial application period only by obtaining the certification via the network according to the user ID. Or, other conceivable means will include adding the program in the data for checking the expiration of validity period.

[0100]

Further, the above-mentioned limitation on the quality, on the subject matter, or on the term of validity can be implemented not only by itself, but also in combination.

[0101]

As described above, taking the approach in which the image / voice data with limitation on the quality, on the subject matter, or on the term of validity is delivered to the contents user as the distribution data for providing trial application, and then after the completion of accounting process, the data without such limitations or data to relieve such limitation is distributed, it will allow the contents user to determine more objectively if the searched contents are the one he or she wanted to obtain, and thus realizing the good environment for the improvement to attain smooth production of new contents.

[0102]

[Effect of the invention]

As described in the foregoing sections, according to the contents information distributing system of this invention, the subject matter, images for instance, of the information representing a right is retrievably stored in certain memory means as an entitled information, and a third person can retrieve and utilize it as much as required when the need arises, and can simply pay the usage fees in accordance with his or her

type of usage. Thus, the system is able to support effectively the transmission of information that is expected to spread out in the coming years.

[0103]

Especially, processing and editing added to the original contents, as well as the management provided to pay the usage fees for the registered contents to the contents registrant will help satisfy the desire of the contents registrant, like the desire of self-fulfillment, and help evoke the urge for the new creation. Further, the provision of high-quality contents to the contents user will promote the smooth running of the contents production circle, realizing the AV contents information distributing system that meets the requirements in the network age.

[0104]

In addition, offering the management so that the image / voice data with limitation on the quality, on the subject matter, or on the term of validity is delivered to the contents user, and that such limitation is relieved after the completion of accounting process, it will allow the contents user to determine more objectively if the searched contents are the one he or she wanted to obtain, and thus promoting the smooth production of the new contents.

[Brief Description of Drawings]

Fig. 1 is a block diagram schematically showing an embodiment regarding a contents information distributing system.

Fig. 2 is a block diagram showing the entire configuration of an AV contents information distributing system.

Figs. 3 (a) through (c) are illustrations exemplifying a contents sent out by the contents registrant.

Figs. 4 (a) and (b) are illustrations showing the contents information separated into elements.

Fig. 5 is a flow chart showing a series of work starting from contents production through to the contents bank registration by the contents registrant.

Fig. 6 is a flow chart showing a series of work starting from contents acquisition through to the accounting process by the contents user.

Fig. 7 is a block diagram showing the configuration in which the low-resolution compressed encoded data is used for providing trial application.

Fig. 8 is a block diagram showing the configuration in which only the differentials between the high resolution data and the low resolution data are distributed at the time of proper purchase.

Fig. 9 is a flow chart showing a series of work starting from the provision of trial application through to the proper purchasing in the embodiment 2.

Fig. 10 is a block diagram showing the configuration in which the low-resolution compressed encoded data is used for providing trial application.

Fig. 11 is a flow chart showing a series of work starting from the provision of trial application through to the proper purchasing in the embodiment 3.

Fig. 12 is a block diagram showing the configuration in which the lower range voice data among other voice data is used for providing trial application.

[Description of Reference Numerals]

- 1: creating means
- 2: production means
- 3: memory means
- 4: transmission means
- 5: display means
- 10: AV contents information distributing system
- 11: contents bank

12: contents registrant
13: contents user
14: financial organization
15: network
16: contents registrant management database
17: contents database
18: contents user management database

FIG. 1

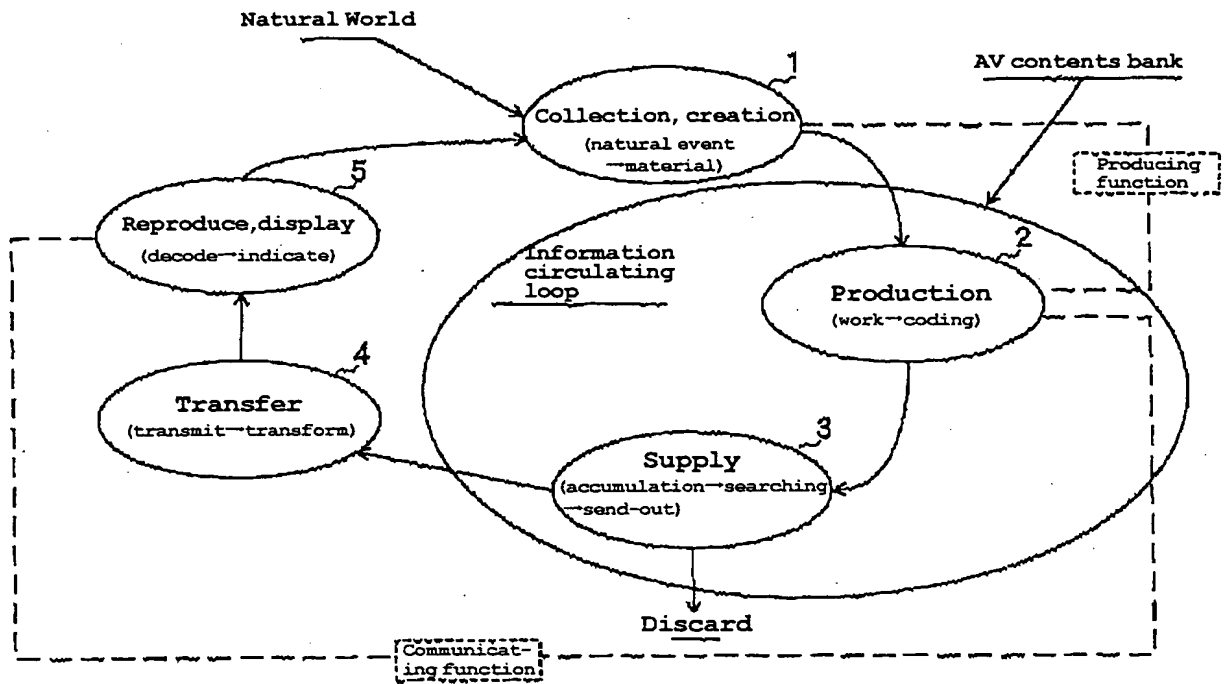


FIG. 2

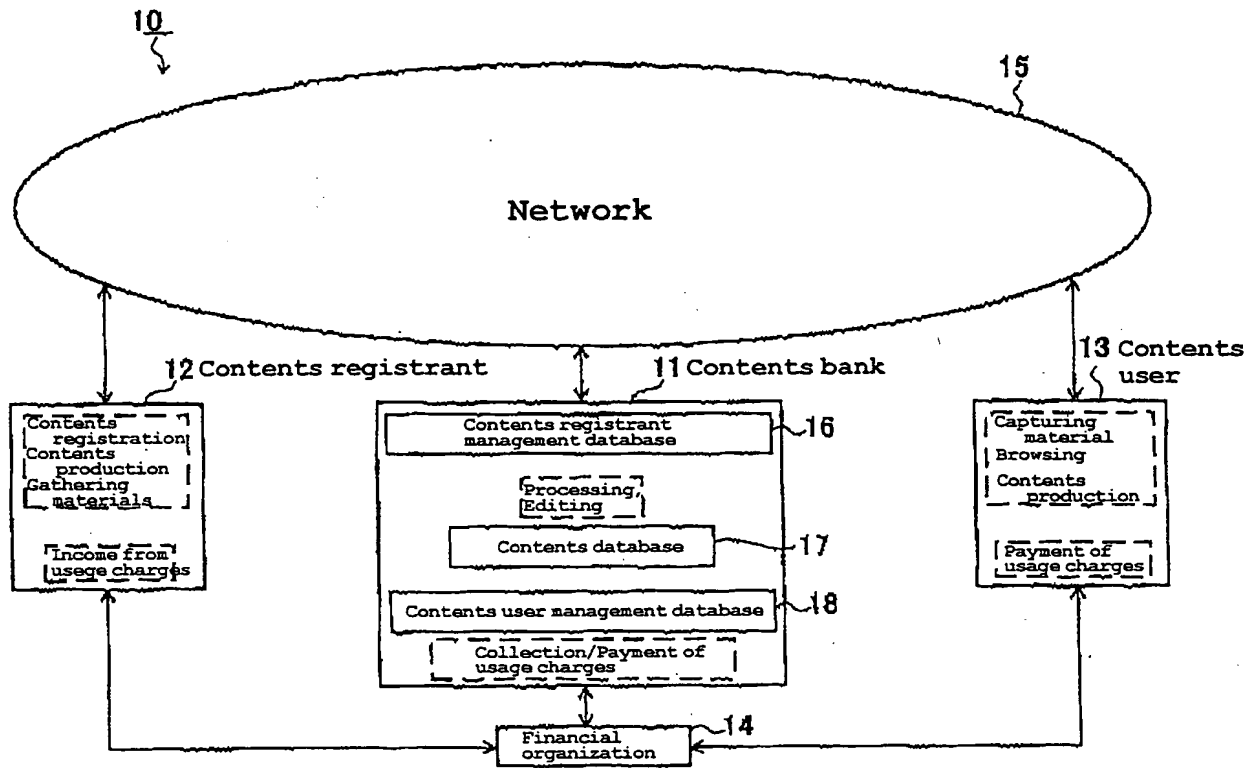
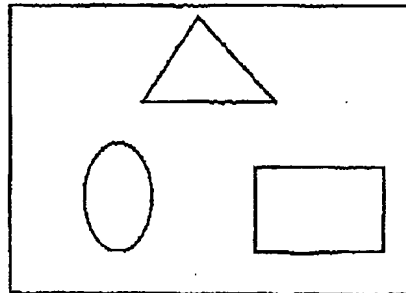


FIG. 3

(a)



Registrant : XY
Title : ABCD
File size : 800kbyte
Data format : BMP

(b)



New title : ABCD-1
File size : 100kbyte
Data format : BMP

(c)



New title : ABCD-2
File size : 150kbyte
Data format : BMP

FIG. 4

(a)

Registrant : XY
Title : ABCD
Processing/Editing performed :
Separating objects, level 4
New title : ABCD-1
File size : 100kbyte
Data format : BMP
Registration date at contents bank :
Feb.18 1998
Usage charges : ¥10
Keyword : animal, rabbit, white, gentle, lovely, ears

(b)

Registrant : XY
Title : ABCD
Processing/Editing performed :
Separating objects, level 4
New title : ABCD-2
File size : 150kbyte
Data format : BMP
Registration date at contents bank :
Feb.18,1998
Usage charges : ¥10
Keyword : plant, flower, yellow, spring, dandelion

FIG. 5

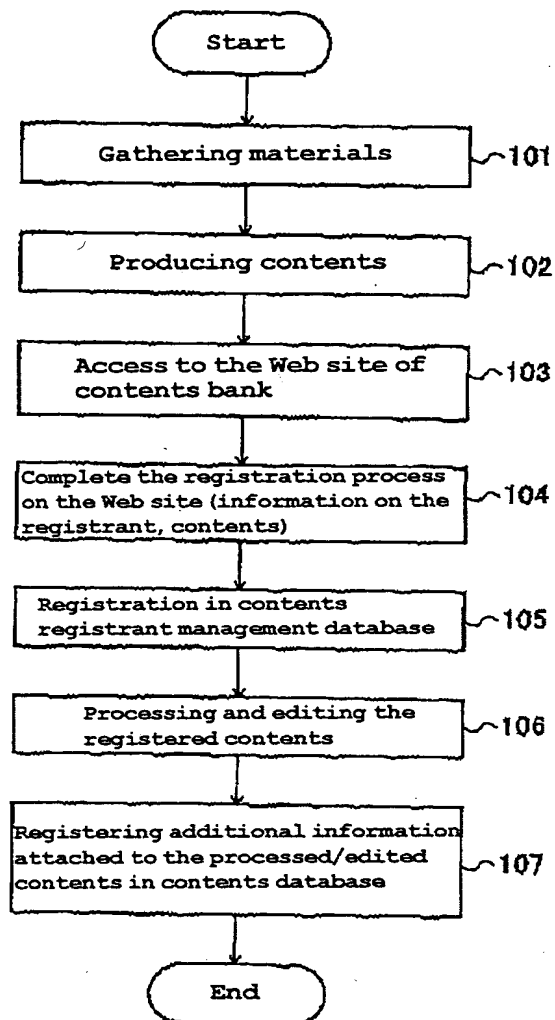


FIG. 6

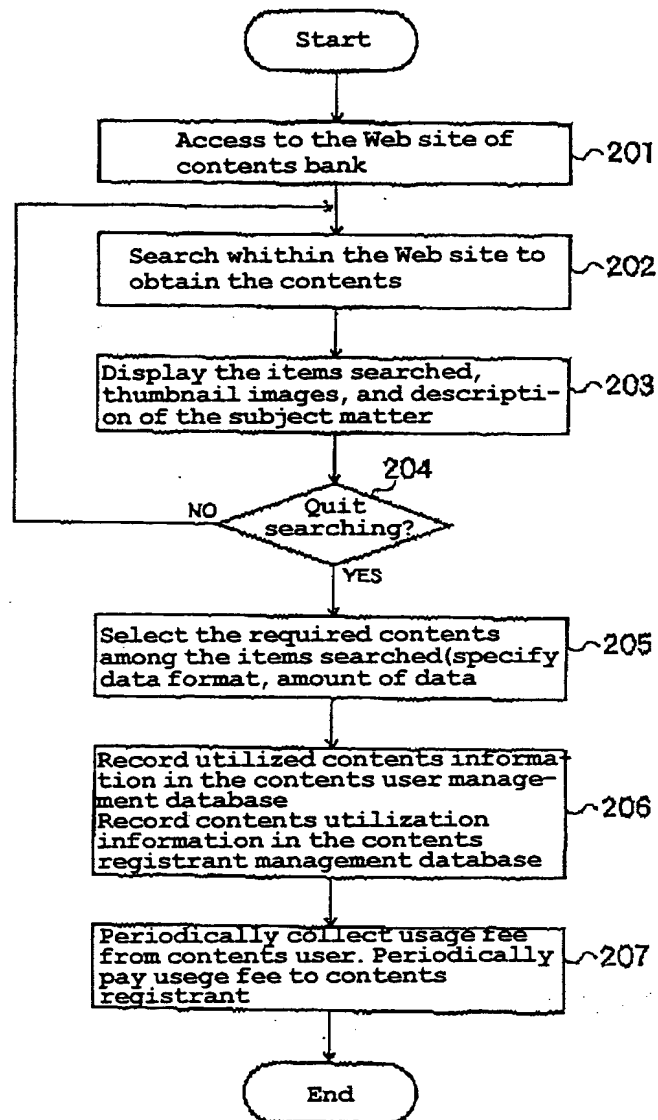


FIG. 7

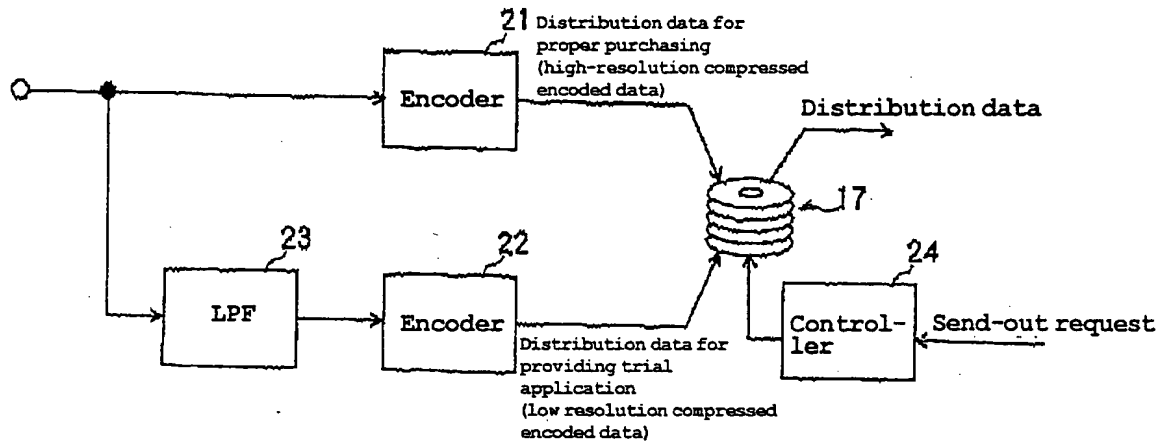


FIG. 8

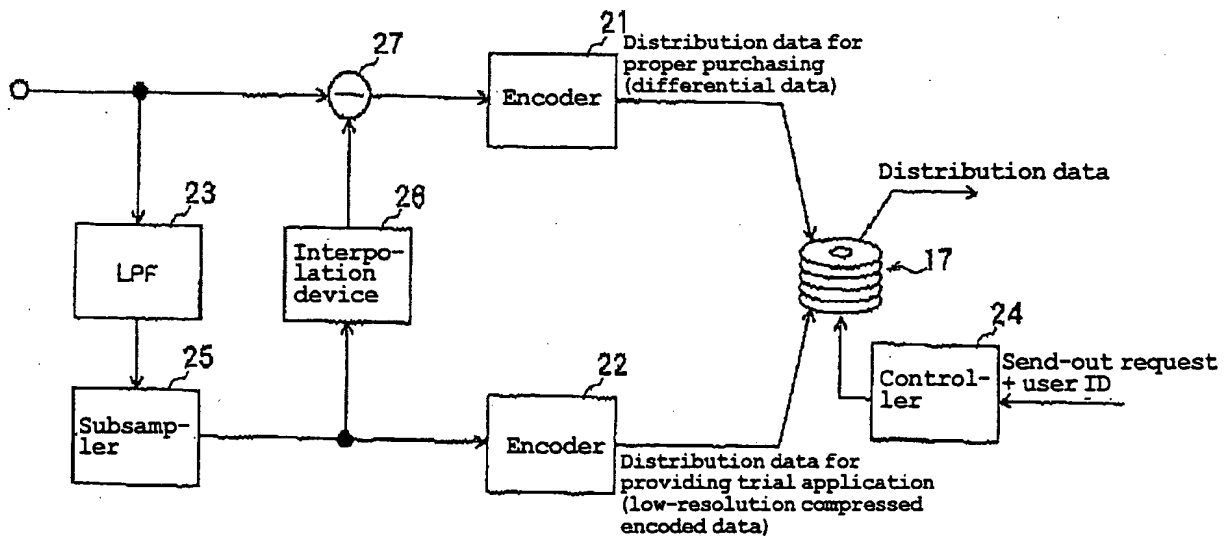


FIG. 9

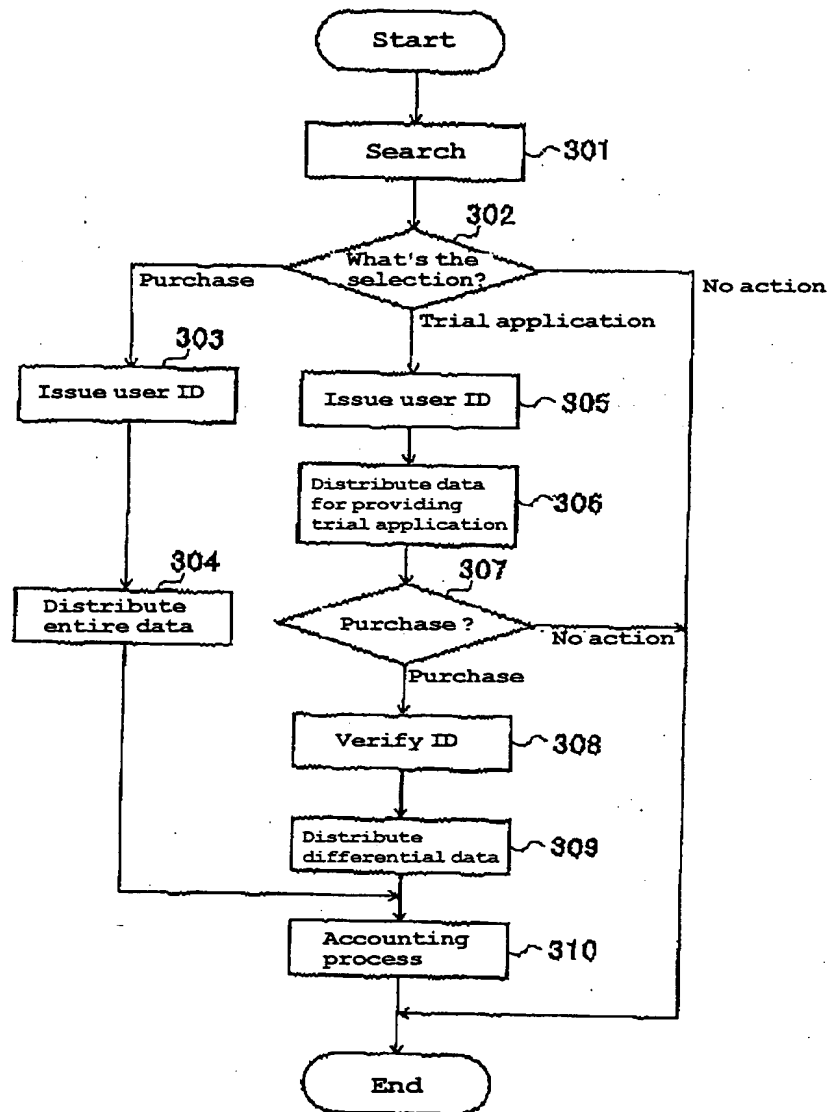


FIG. 10

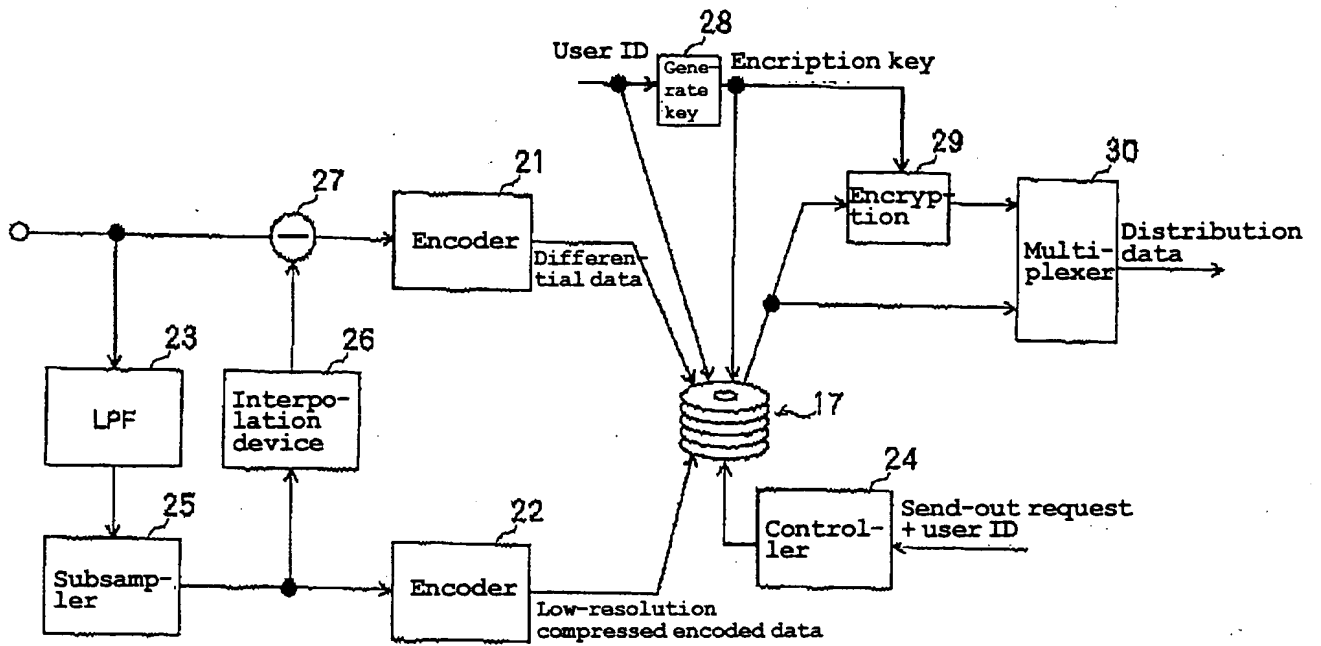


FIG. 11

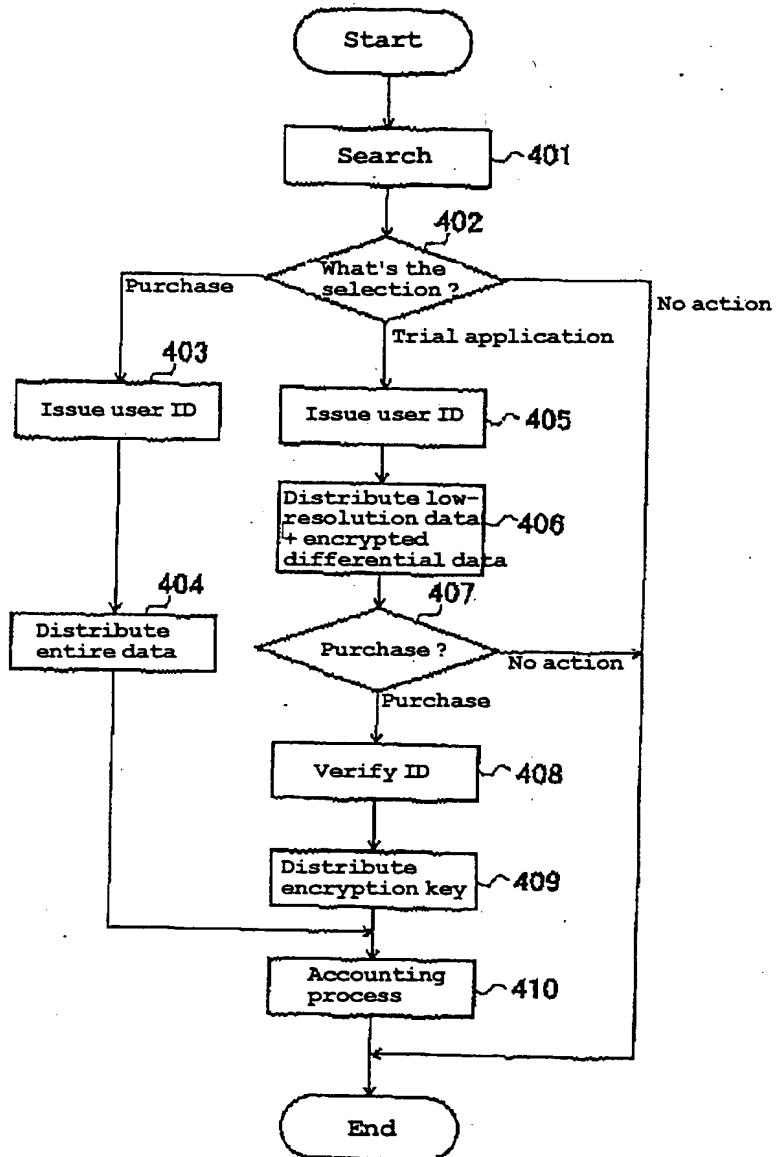
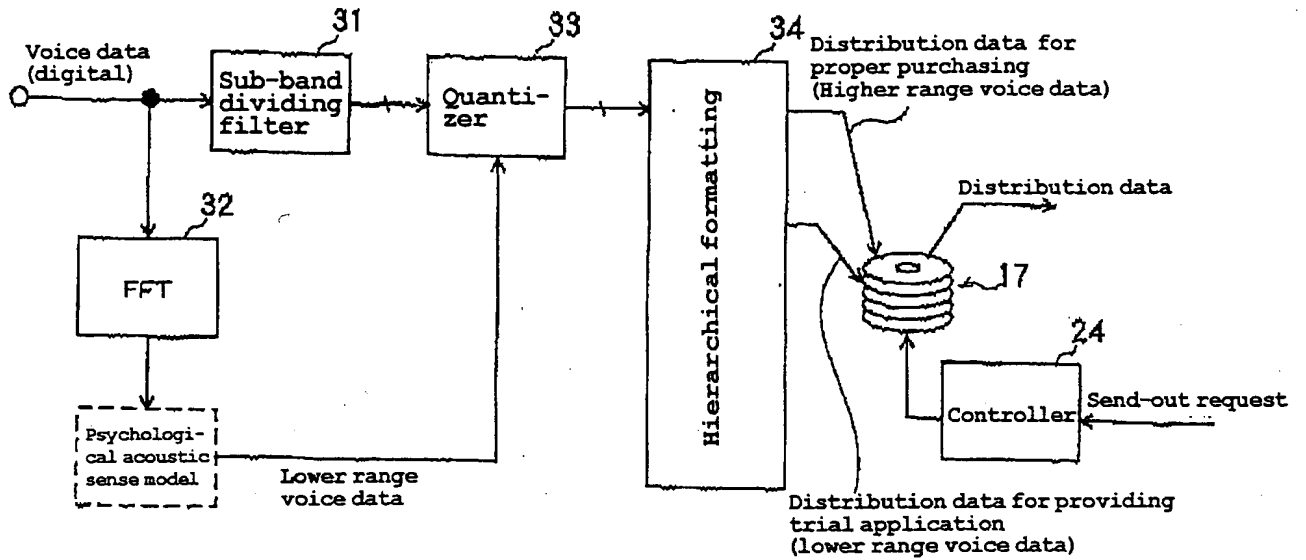


FIG. 12



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